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<u>CLAIMS</u>

1. Method for evaluating the performance of a mobile telephone network, comprising the steps of:

- simulating (102, 201) a first configuration of

5 said mobile telephone network;

- simulating (202) a second configuration of said mobile telephone network;

said first and second configurations of said mobile telephone network being statistically independent of

10 each other;

each of said simulation steps (102, 201, 202) comprising the steps of:

- specifying a total number of users to be simulated, $N_{UETOT}(s)$;

15 - determining (103, 203, 204, 205, 206) a sequence of activation of user blocks $N_{UESTEP}(s)$ included in said total number of users to be simulated $N_{UETOT}(s)$;

- activating (103, 203, 204, 205, 206) said user blocks in succession until said total number of users

20 to be simulated $N_{UETOT}(s)$ is reached, each user block indicating a traffic distribution; and

- processing (103, 106, 109, 203, 204, 205, 206) at least one radio resource management event relating to the traffic distribution associated with each

25 currently activated user block.

2. Method of evaluation according to Claim 1, characterized in that it comprises the step of:

- repeating said steps of simulating said mobile telephone network until a predetermined accuracy

threshold is reached for each simulated network value.

3.   Method of evaluation according to any one of the preceding claims, characterized in that each
5 activated user block $N_{UESTEP}(s)$ comprises at least one user.

4.   Method of evaluation according to any one of the preceding claims, characterized in that said step (103, 104, 106, 107, 109, 110, 203, 204, 205, 206) of
10 processing at least one radio resource management event comprises the step of:

-    executing at least one radio resource management algorithm.

5.   Method of evaluation according to Claim 4,
15 characterized in that said radio resource management algorithm comprises an admission control algorithm (103, 203, 204, 205, 206).

6.   Method of evaluation according to Claim 5, characterized in that it comprises the steps of:

20 -   detecting that at least one admission control threshold has been exceeded for at least one of the users belonging to the currently activated user block $N_{UESTEP}(s)$; and

-    taking said user out of service.

25 7.   Method of evaluation according to any one of the Claims 4-6, characterized in that said radio resource management algorithm comprises a congestion control algorithm (106).

8.   Method of evaluation according to Claim 7,
30 characterized in that it comprises the steps of:

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-       detecting that at least one congestion control threshold has been exceeded for at least one of the users belonging to the currently activated user block $N_{UESTEP}(s)$; and

5   -   taking said user out of service.

9.   Method of evaluation according to any one of Claims 4-8, characterized in that said radio resource management algorithm comprises an outage control algorithm (109).

10 10.   Method of evaluation according to Claim 9, characterized in that it comprises the steps of:

-       detecting that at least one power threshold for the outage control has been exceeded for at least one of the users belonging to the currently activated

15 user block $N_{UESTEP}(s)$; and

-       taking said user out of service.

11.   Method of evaluation according to any one of Claims 2-10, characterized in that said step of repeating said steps of simulating said mobile

20 telephone network comprises:

-       a step (112) of collecting and processing statistical results (113); and

-       a step (116) of checking the accuracy of the resulting statistical data.

25 12.   Method of evaluation according to Claim 11, characterized in that said step of collecting and processing statistical results comprises the steps of:

-       collecting (8a) statistical results (113)

30 relating to simulated network values; and

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-    obtaining (8a) at least one accuracy indicator
for each of said simulated network values.

13. Method of evaluation according to · Claim 12,
characterized in that said at least one accuracy
5 indicator comprises at least one parameter selected
from the confidence interval of a statistical value
and the stability indicator of a statistical value.

14. Method of evaluation according to any one of
Claims 11-13, characterized in that said step of
10 checking the accuracy of the resulting statistical
data comprises the steps of:

-    comparing (10), for each simulated network
value, said at least one accuracy indicator with the
corresponding predetermined accuracy threshold;

15 -   terminating (10) the simulation when said at
least one accuracy indicator reaches said
predetermined accuracy threshold.

15. Equipment for simulating at least a first and a
second configuration of a mobile telephone network,
20 said first and second configurations of said mobile
telephone network being statistically independent of
each other, and each comprising a total number of
users to be simulated $N_{UETOT}(s)$, said simulation
equipment (5) including:

25 -   at least one object (11) representing a network
controller belonging to said mobile telephone
network; said at least one object (11) comprising:

-    first modules (103, 203, 204, 205, 206) for
determining a sequence of activation of user blocks
30 $N_{UESTEP}(s)$ included in said total number of users to be

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simulated $N_{UETOT}(s)$;

-   second modules (103, 203, 204, 205, 206) for activating said user blocks in succession until said total number of users to be simulated $N_{UETOT}(s)$ is

5   reached, each user block indicating a traffic distribution; and

-   third modules (103, 106, 109, 203, 204, 205, 206) for processing at least one radio resource management event relating to the traffic distribution

10 associated with each activated user block.

16. Simulation equipment according to Claim 15, characterized in that said at least one object (11) comprises data structures (25, 26, 30, 60) for supporting the processing of said at least one radio

15 resource management event, said data structures including:

-   a list of activatable users (25);

-   a list of active users (60); and

-   a group (26) of lists of users out of service;

20 -   a map of the system resources (30).

17. Simulation equipment according to Claim 16, characterized in that said system resources map (30) comprises a plurality of structures, each representing a transceiver device belonging to said

25 mobile telephone network, each structure comprising a reference to the corresponding transceiver device and a list of Cell Context objects, one for each cell controlled by said transceiver device.

18. Simulation equipment according to Claim 17,

30 characterized in that each Cell Context object

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includes groups of radio resource management parameters (48, 49).

19. Simulation equipment according to Claim 17, characterized in that said groups of parameters (48,

5 49) comprise at least one parameter selected from: a load threshold for the admission control, a load threshold for congestion control, and a power threshold for the outage control.

20. Simulation equipment according to any one of the

10 preceding claims, characterized in that it comprises a simulation engine (10) including an event scheduler module for specifying the sequence of operations performed by said simulation equipment (5).

21. Program for electronic computer, loadable into

15 the memory of at least one electronic computer and including program codes for implementing the steps of the method of any of Claims 1-14 when said program is executed by said electronic computer.